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SCIENCE

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SIGNALLING THROUGH SPACE WITHOUT WIRES.*

SCIENCE has conferred one great benefit on mankind. It has supplied us with a new sense. We can now see the invisible, hear the inaudible and feel the intangible. We know that the universe is filled with a homogeneous continuous elastic medium which transmits heat, light, electricity and other forms of energy from one point of space to another without loss. The discovery of the real existence of this 'ether' is one of the great scientific events of the Victorian era. Its character and mechanism are not yet known by us. All attempts to 'invent' a perfect ether have proved beyond the mental powers of the highest intellects. We can only say with Lord Salisbury that the ether is the nominative case to the verb 'to undulate.' We must be content with a knowledge of the fact that it was created in the beginning for the transmission of energy in all its forms, that it transmits these energies in definite waves and with a known velocity, that it is perfect of its kind, but that it still remains as inscrutable as gravity or life itself.

Any disturbance of the ether must originate with some disturbance of matter. An explosion, cyclone or vibratory motion may occur in the photosphere of the sun. A disturbance or wave is impressed on the

* An address given before the Royal Institution by W. H. Preece, Esq., C.B., F.R.S., M.Inst.C.E.